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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,436	07/17/2003	Takanobu Higuchi	041514-5304	1107
55694	7590	04/21/2006	EXAMINER	
DRINKER BIDDLE & REATH (DC)			DINH, TAN X	
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SUITE 1100			PAPER NUMBER	
WASHINGTON, DC 20005-1209			2627	

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/620,436	Applicant(s) HIGUCHI ET AL.	
	Examiner TAN X. DINH	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

1) Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

2) The I.D.S filed 3/19/2004 has been considered by the Examiner. However, the Japan and/or foreign document(s), if they have not been written in English, are considered to the extent that could be understood from the English Abstract and the drawings.

Form PTO-1449 or PTO/SB/08 is(are) attached herein.

3) The drawings are objected to because *figures 1-4* should be designated by a legend such as --PRIOR ART-- since only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

The replacement sheet(s) should be labeled "REPLACEMENT SHEET" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures.

If the changes are not accepted by the Examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4) The title of the invention is not descriptive. A new

title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested:

OPTICAL RECORDING MEDIUM HAVING CAVITY PHASE PITS FACING THE
READING LASER BEAM.

5) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

6) (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7) Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by TAKAGI et al (4,519,064).

TAKAGI et al discloses an optical recording medium as claimed in claim 1, comprising:

a substrate comprises a recording surface provided with a phase pit array for holding information (Fig.4, substrate 301);

a reflective layer formed on the recording surface (Fig.4, reflective layer 305); and

a protective layer formed on the reflective layer (Fig.4, protective layer 308), wherein each phase pit of the phase pit array is a cavity which is reentrant as viewed from the entrance side of a reading laser beam (Fig.4, reading beam 303, information

cavity pits 304).

Claim 9 adds to claim 1 the features of short wavelength laser beam and high numerical aperture, which are shown in figures 5-7 (it is noted that, any wavelength and numerical aperture in optical recording device can be considered as short wavelength and high numerical aperture since the claim did not define the specific values for these items).

8) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9) This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the

applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10) Claims 2-8 and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over TAKAGI et al (4,519,064).

TAKAGI et al discloses all the subject matter as claimed in claims 2,3,12 and 13, except to specifically show that the thickness of the reflective layer is less in the inner face of the recess of each phase pit of the phase pit array than in other parts and same thickness in direction perpendicular to principle plane of substrate. However, the technique of using a reflective layer of thickness less in the inner face of the recess of each phase pit of the phase pit array than in other parts and same thickness in direction perpendicular to principle plane of substrate are old and widely used in the optical recording art (evidence in KATO, US 6,975,577, figure 1, reflective layer 5; NOBUMASA et al, US 6,071,588, figure 1, reflective layer or NAGATA et al, US 5,410,534, figure 2a, reflective layer 3). Therefore, someone within the level of skill in the art at the time of the invention was made to apply this technique in TAKAGI et al's optical recording medium as claimed.

As to claims 4 and 14, the feature of using protective layer (transparent layer) of 0.1 ± 0.03 mm is old and well known in optical

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recording art (See WATANABE et al, US 5,838,646, figure 2, protective layer (transparent layer) has thickness of 0.01mm - 0.6mm).

As to claims 5,10 and 11, the feature of using a reading laser beam with a wavelength of 405 ± 5 nm that passes through an objective lens with a numerical aperture of 0.80 or more is old and well known in optical recording art (See WATANABE et al, US 5,838,646, abstract).

As to claims 6 and 15, TAKAGI et al shows the maximum value of the reflectance of the reflective layer with respect to the reading laser beam that is subjected to modulation according to the phase pit is in the range of at least 10% and no more than 25% (column 5, lines 32-39).

As to claims 7,8,16 and 17, the technique of using a reflective layer comprises alloy principle components of Ag or Al and at least one of Pd, Ti, Cr, Zn, Cu, Si, etc., and thickness of less than 14nm are old and well known in the optical recording art (evidence in NOBUMASA et al, US 6,071,588, column 6, line 66 to column 7, line 38).

11) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(see form PTO-892 attached herein).

Applicant is reminded that in amending in response to a rejection of claims (if the rejection involves with any applicable arts) the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objection made. Applicant *must also show how the amendments avoid such references and objections.* See 37 CFR § 1.111(c).

12) Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAN Xuan DINH whose telephone number is (571) 727-7586. The examiner can normally be reached on MONDAY to FRIDAY from 8:00AM to 5:30PM.

The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TAN DINH
PRIMARY EXAMINER

April 18, 2006